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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Roberto Puon

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EXAMINER

TODD, GREGORY G

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/764,693	Applicant(s) PUON ET AL.	
	Examiner GREGORY G. TODD	Art Unit 2457	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 September 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 10-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 10-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. This office action is in response to applicant's amendment filed, 18 September 2009, of application filed, with the above serial number, on 26 January 2004 in which claims 1, 6, and 19 have been amended. Claims 1-8 and 10-19 are pending in the application.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-2, 4-8, 10-12, and 14-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gale et al (hereinafter "Gale", 6,868,509) in view of Heeren et al (hereinafter "Heeren", 6,311,288) and Dantu et al (hereinafter "Dantu", 7,167,443).

As per Claim 1, Gale teaches a network router, comprising:

memory (at least col. 6:4-29);

a layer 1 portion having a first communication interface and a second communication interface (at least col. 5:46-54; col. 7:36-63; col. 6:15-29; Fig. 3; router w/ 2 comm. ports connected to network connections);

a layer 2 portion (at least col. 6:15-64; communication stacks);

a layer 3 portion having a layer 3 protocol stack (at least col. 6:15-29), said layer 3 protocol stack having a routing table stored in said memory and specifying, for a particular destination, a data path from said layer 3 portion to said layer 2 portion, said layer 3 protocol stack configured to provide a plurality of data packets destined for the particular destination and to route through said data path each of said data packets based on said routing table (at least col. 6:15-64; routing table); and

switching logic configured to automatically initiate a layer 2 switch such that said layer 2 portion interfaces a plurality of said data packets with said second communication interface in lieu of said first communication interface, wherein said layer 2 portion is configured to interface at least one of said data packets with said first communication interface prior to said layer 2 switch (at least col. 5:30-35; col. 6:15-64; fault router using networking/switch logic to route communications to non-faulted network from faulted/primary network), wherein said first communication interface is configured to transmit said at least one data packet to a second router over a first data path through a first network, and wherein said second communication interface is configured to transmit said plurality of said data packets to said second router over a second data path through a second network (at least col. 5:30-35; col. 6:15-64; non-faulted network from faulted/primary network).

Gale fails explicitly teaching wherein said layer 2 switch is transparent to said layer 3 portion and the communication interfaces are configured to transmit via a first and second protocol. However, the use and advantages for using such a system is well known to one skilled in the art at the time the invention was made as evidenced by the

teachings of Heeren. Heeren teaches a communications device (FRAU 12) detecting a link failure and providing access to a parallel backup path on another network using another protocol and being transparent to routers and other communications devices, thereby quickly establishing a backup link to continue transport of the information (at least col. 4:25-37; Fig. 1, 2; col. 6:49-57; 9:45-54). Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to incorporate Heeren's transparent backup network with Gale's system as Heeren teaches it is advantageous to quickly establish a backup link to continue the transport of information without rerouting all the information to be transmitted and the backup networks such as ISDN and PSTN as simply being alternate, thereby complementing Gale's redundant network protocols (col. 5:46-54) as the substitution of one known protocol or network for another would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

Gale and Hereen fail to explicitly teach said layer 3 protocol stack further configured to detect a layer 3 error condition and the respective layer 2 switch for said layer 2 portion of said network router in response to such error condition. However, the use and advantages for using such a system is well known to one skilled in the art at the time the invention was made as evidenced by the teachings of Dantu. Dantu teaches communication link failure at layer 1, 2, or 3 being detected at the layer 3 and signaled to other routers, and associated switching of layer 1 and 2 in response from the working path to the protection path from the central IP router or router 204 (at least col. 7:48-8:33; col. 18:11-37). Therefore, it would have been obvious to one of ordinary

skill in the art, at the time the invention was made, to incorporate the use of Dantu's signaling with Gale and Heeren as Dantu teaches it enables a communication link failure to be detected and responded to faster (col. 8:27-33) than conventional layer 3 error conditions are found.

As per Claim 2. Gale fails to explicitly teach wherein said switching logic is further configured to automatically initiate another layer 2 switch, in response to a detection that said error condition is resolved, such that said layer 2 portion interfaces a second plurality of said data packets with said first communication interface in lieu of said second communication interface. However, the use and advantages for using such a system is well known to one skilled in the art at the time the invention was made as evidenced by the teachings of Heeren. Heeren teaches rerouting along the backup network until the primary network is again fully available (at least col. 9:47-54).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, as all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill at the time of the invention.

As per Claim 4. The router of claim 1, wherein said first data path comprises a T1 link (at least col. 5:46-54).

As per Claim 5. Gale fails to teach wherein said second communication interface comprises a modem. However, the use and advantages for using such a system is well

known to one skilled in the art at the time the invention was made as evidenced by the teachings of Heeren. Heeren teaches using a modem for the backup path (at least col. 6:49-60). Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to substitute the use of Heeren's modem with Gale's second communication port as seen above, Heeren's backup network paths could be used with a modem based on design choice to provide access with that network protocol.

As per Claim 6, Gale teaches a network router, comprising:

memory (at least col. 6:4-29);

a layer 3 protocol stack configured to provide a plurality of data packets to be transmitted by said network router to a second router, the layer 3 protocol stack having a routing table stored in said memory and specifying a data path for routing said plurality of data packets to said second router, the layer 3 protocol stack configured to insert, into each of said plurality of data packets, route information indicative of said data path based on said routing table (at least col. 6:15-64; Fig. 3; router and communication stacks with routing table);

a first layer 2 protocol stack; a second layer 2 protocol stack (at least col. 6:15-64; communication stacks);

a plurality of layer 3 network interfaces configured to receive data packets from said layer 3 protocol stack, wherein said layer 3 protocol stack is configured to provide each of said plurality of data packets to one of said layer 3 network interfaces (at least col.

5:46-54; col. 7:36-63; col. 6:15-29; Fig. 3; fault router w/ 2 comm. ports connected to network connections); and

layer 2 switching logic configured to receive each of said plurality of data packets from said one layer 3 network interface, said layer 2 switching logic configured to provide at least one of said plurality of data packets to said first layer 2 protocol stack such that said at least one of said plurality of data packets is transmitted via a primary network, said layer 2 switching logic configured to perform a layer 2 switch in response to a detection of an error condition such that said layer 2 switching logic provides, in response to said detection, at least one other of said plurality of data packets to said second layer 2 protocol stack such that said at least one other of said plurality of data packets is transmitted via a secondary network (at least col. 5:30-35; col. 6:15-64; fault router using networking/switch logic to route communications to non-faulted network from faulted network).

Gale fails explicitly teaching wherein said layer 2 switch is transparent to said layer 3 portion and the communication interfaces are configured to transmit via a first and second protocol. However, the use and advantages for using such a system is well known to one skilled in the art at the time the invention was made as evidenced by the teachings of Heeren. Heeren teaches a communications device (FRAU 12) detecting a link failure and providing access to a parallel backup path on another network using another protocol and being transparent to routers and other communications devices, thereby quickly establishing a backup link to continue transport of the information (at least col. 4:25-37; Fig. 1, 2; col. 6:49-57; 9:45-54). Therefore, it would have been

obvious to one of ordinary skill in the art, at the time the invention was made, to incorporate Heeren's transparent backup network with Gale's system as Heeren teaches it is advantageous to quickly establish a backup link to continue the transport of information without rerouting all the information to be transmitted and the backup networks such as ISDN and PSTN as simply being alternate, thereby complementing Gale's redundant network protocols (col. 5:46-54) as the substitution of one known protocol or network for another would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

Gale and Hereen fail to explicitly teach the layer 3 protocol stack further configured to detect a layer 3 error condition and the respective layer 2 switch in said network router in response to such error condition. However, the use and advantages for using such a system is well known to one skilled in the art at the time the invention was made as evidenced by the teachings of Dantu. Dantu teaches communication link failure at layer 1, 2, or 3 being detected at the layer 3 and signaled to other routers, and associated switching of layer 1 and 2 in response from the working path to the protection path from the central IP router or router 204 (at least col. 7:48-8:33; col. 18:11-37). Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to incorporate the use of Dantu's signaling with Gale and Hereen as Dantu teaches it enables a communication link failure to be detected and responded to faster (col. 8:27-33) than conventional layer 3 error conditions are found.

As per Claim 7. The system of claim 6, further comprising: a first communication interface configured to transmit, over said primary network to said second router, each of said plurality of data packets provided to said first layer 2 protocol stack; and a second communication interface configured to transmit, over said secondary network to said second router, each of said plurality of data packets provided to said second layer 2 protocol stack (at least col. 6:15-64; routing table for routing to respective network).

As per Claim 8. The system of claim 7, wherein said protocol stacks, said network interfaces, said switching logic, and said communication interfaces are each integrated within a housing unit (at least Fig. 3:313; col. 6:15-29; fault router).

As per Claim 17. The router of claim 1, wherein said layer 3 portion is configured to insert, into each of said data packets, the same route information based on said routing table (at least col. 6:15-64; routing table for routing to respective network).

As per Claim 18. The router of claim 1, wherein said second data path is a dedicated path from said network router to said second router (at least Heeren Fig. 1).

Claims 10-12, 14-16, and 19 do not add or define, in substance, any additional limitations over claims 1-2, 4-8, and 17-18 and therefore are rejected for similar reasons.

4. Claims 3 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gale in view of Heeren and Dantu, further in view of Singh et al (hereinafter "Singh", 2003/0088698).

Gale, Heeren, and Dantu fail to teach wherein said second communication interface is configured to communicate using point-to-point protocol (PPP). However, the use and advantages for using such a system is well known to one skilled in the art at the time the invention was made as evidenced by the teachings of Singh. Singh teaches using PPP communication (at least paragraph 16). Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to substitute the use of one known element, PPP of Singh, for another, with the network types of Gale (at least col. 5:45-54).

Response to Arguments

5. Applicant's arguments filed 18 September 2009 have been fully considered but they are not persuasive.

Applicant argues Dantu does not teach performing a "layer 2 switch" in response to a detection of a layer 3 condition at a layer 3 protocol stack. In response to applicant's argument, Dantu clearly teaches receiving or determining an error of any layer 1, 2, and 3 (col. 17:21-34) errors and such determination coming from a OSI level 3 determination (on its own or from another router; col. 13:53-55) of a failure of a communication link and the location of the failure (col. 18:30-34) and switching at layer 1 *and layer 2* from a working path (first interface) to a protection path (second interface) in response (col. 7:48-8:33; 18:50-56). Applicant also appears to argue that Dantu's router must be informed from another node of such errors, however, as above, col.

13:53-55 clearly provides that such determination can obviously be from the router's own determination or from another router.

Applicant further argues that Dantu's switching is not transparent to layer 3 protocol stack. While Dantu does teach updating routing and forwarding tables accordingly, such feature is not being relied on in Dantu. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In this case, Heeren is relied on for teaching such layer 3 transparent switching.

Applicant is also suggested to see the below cited Ghahremani reference (Fig. 22-24; col. 21:44-23:39) when responding to this Office Action.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Newly cited Ghahremani and Wheeler et al, in addition to previously cited Nguyen, Puon et al, Ueno et al, Li, Riggan et al, Farris, Jones, Joseph et al and Shew et al, are cited for disclosing pertinent information related to the claimed invention. Applicants are requested to consider the prior art references for relevant teachings when responding to this office action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to GREGORY G. TODD whose telephone number is (571)272-4011. The examiner can normally be reached on Monday - Friday 9:00am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Etienne can be reached on (571)272-4001. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/G. G. T./
Examiner, Art Unit 2457

/ARIO ETIENNE/
Supervisory Patent Examiner, Art Unit 2457